Approved for use through 03/31/2009. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

aperwork Reduction Apt of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

INFORMATION DISCLOSURE

STATEMENT BY APPLICANT

Substitute for form 1449/PTO

(Use as many sheets as necessary) Sheet

APR 13 2009

	Complete if Known					
Application Number	10/550,220					
Filing Date	October 23, 2006					
First Named Inventor	Beachy and Cooper					
Art Unit	1647					
Examiner Name	Gamett, Daniel C.					
Attorney Docket Number	JHU1980-1					

	U. S. PATENT DOCUMENTS				
Examiner Initials*	Cite No.1	Document Number Number-Kind Code ^{2 (if known)}	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
, <u></u>	AA	2002/0177163	11-28-2002	Beachy, Philip A.	
	AB	2004/0082036	04-29-2004	Beachy, Philip A.	
	AC	2006/0211114	09-21-2006	Beachy, Philip A.	
	AD	6,132,728	10-17-2000	Beachy, Philip A.	
	AE	6,191,137	02-20-2001	Claude Aleman	
	AF	6,194,395	02-27-2001	Thomas W. Schultz	
	AG	6,194,430	02-27-2001	James Berger Camden	
	AH	6,214,794	04-10-2001	Beachy, Philip A.	
	}				

	FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No.1	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)			or Relevant Figures Appear	<u>'</u>
	AI	WO 95/18856	07-13-1995	Ingham, Philip, W.		
	AJ	WO 96/17924	06-13-1996	Beachy, Philip A.		

Examiner	(Danial Cametti (07/04/0000)	Date
Signature	/Daniel Gamett/ (07/24/2009)	Considered

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc. www.FormsWorkflow.com

This collection of information is required by 37 CFR 1.98. The information is estimated to abtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application. Form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Apt of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Complete if Known Substitute for form 1449/PTO **Application Number** 10/550,220 Filing Date October 23, 2006 INFORMATION DISCLOSURE First Named Inventor Beachy and Cooper STATEMENT BY APPLICANT Art Unit 1647 **Examiner Name** Gamett, Daniel C. (Use as many sheets as necessary) 5 JHU1980-1 Attorney Docket Number Sheet

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AK	BANKER et al., "Rat Hippocampal Neurons in Dispersed Cell Culture," <i>Brain Research</i> , 126:397-425 (1977).	
	AL	BANKER et al., "Further Observations on Hippocamal Neurons in Dispersed Cell Culture," <i>J Comp Neur</i> , 187:469-494 (1979).	
	AM	BUMCROT et al., "Proteolytic Processing Yields Two Secreted Forms of Sonic Hedgehog," <i>Mol Cell Biol</i> , 15(4):2294-2303 (1995).	
	AN	CHANG et al., "Products, Genetic Linkage and Limb Patterning Activity of a Murine Hedgehog Gene," <i>Development</i> , 120:3339-3353 (1994).	
	AO	EKKER et al., "Patterning Activities of Vertebrate Hedgehog Proteins in the Developing Eye and Brain," <i>Current Biology</i> , 5(8):944-955 (1995).	
	AP	EKKER et al., "Distinct Expression and Shared Activities of Members of the Hedgehog Gene Family of Xenopus Laevis," <i>Development</i> , 121:2337-2347 (1995).	
	AQ	ERICSON et al., "Pax6 Controls Progenitor Cell Identity and Neuronal Fate in Response to Graded Shh Signaling," <i>Cell</i> , 90:169-180 (1997).	
	AR	FAN et al., "Long-Range Sclerotome Induction by Sonic Hedgehog: Direct Role of the Amino-Terminal Cleavage Product and Modulation by the Cyclic AMP Signaling Pathway," <i>Cell</i> , 81:457-465 (1995).	

Examiner	(Daniel Camett/ (07/04/0000)	Date	
Signature	/Daniel Gamett/ (0 / /24/2009)	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc. www.FormsWorkflow.com

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Approved for use through 03/31/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Apt of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Complete if Known **Application Number** 10/550,220 Substitute for form 1449/PTO Filing Date October 23, 2006 INFORMATION DISCLOSURE First Named Inventor **Beachy and Cooper** STATEMENT BY APPLICANT Art Unit 1647 Gamett, Daniel C. **Examiner Name** (Use as many sheets as necessary) 5 JHU1980-1 Attorney Docket Number Sheet

AS	FIETZ et al., "Secretion of the Amino-Terminal Fragment of the Hedgehog Protein is Necessary and Sufficient for Hedgehog Signalling in Drosophila," <i>Current Biology</i> , 5(6):643-650 (1995).
AT	FORBES et al., "Hedgehog is Required for the Proliferation and Specification of Ovarian Somatic Cells Prior to Egg Chamber Formation in Drosophila," Development, 122:1125-1135 (1996).
AU	GUGLIELMO et al., "Distinct Endocytic Pathways Regulate TGF-β Receptor Signalling and Turnover," <i>Nature Cell Biology</i> , 5:410-421 (2003).
AV	GUY, R. Kip, "Inhibition of Sonic Hedgehog Autoprocessing in Cultured Mammalian Cells by Sterol Deprivation," <i>PNAS</i> , 97(13):7307-7312 (2000).
AW	HYNES et al., "Induction of Midbrain Dopaminergic Neurons by Sonic Hedgehog," Neuron, 15:35-44 (1995).
AX	KILSDONK et al., "Cellular Cholesterol Efflux Mediated by Cyclodextrins," Journal of Biological Chemistry, 270(29):17250-17256 (1995).
AY	LAI et al., "Patterning of the Neural Ectoderm of Xenopus Laevis by the Amino-Terminal Product of Hedgehog Autoproteolytic Cleavage," <i>Development</i> , 121:2349-2360 (1995).
AZ	LEE et al., "Secretion and Localized Transcription Suggest a Role in Positional Signaling for Products of the Segmentation Gene Hedgehog," Cell, 71:33-50 (1992).
BA	LEE et al., "Autoproteolysis in Hedgehog Protein Biogenesis," Science, 266:1528-1537 (1994).

Examiner	/Daniel Gamett/ (07/24/2009)	: 1,	Date	
Signature	/Daniel Gamett/ (07/24/2009)		Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc. www.FormsWorkflow.com

torm with next communication to applicant.

Applicant is unique citation designation number (optional).

Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Approved for use through 03/31/2009. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Apt of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number Complete if Known

				Col	ilpiete il Kilowii	\
	Substitute for form 1449/P	то		Application Number	10/550,220	
				Filing Date	October 23, 2006	
1	NFORMATION DISC	CLO	SURE	First Named Inventor	Beachy and Cooper	
STATEMENT BY APPLICANT			CANT	Art Unit	1647	
	(Use as many sheets as nec	essary)	Examiner Name	Gamett, Daniel C.	
	Ι Δ		5	Attorney Docket Number	IHI 11980-1	

ВВ	LIEM et al., "Regulation of the Neural Patterning Activity of Sonic Hedgehog by Secreted BMP Inhibitors Expressed by Notochord and Somites," <i>Development</i> , 127:4855-4866 (2000).
	LOPEZ-MARTINEZ et al., "Limb-Patterning Activity and Restricted Posterior Localization of the Amino-Terminal Product of Sonic Hedgehog Cleavage,"
BC	Current Biology, 5(7):791-796 (1995).
BD	MARTI et al., "Distribution of Sonic Hedgehog Peptides in the Developing Chick and Mouse Embryo," <i>Development</i> , 121:2537-2547 (1995).
BE	MARTI et al., "Requirement of 19k Form of Sonic Hedgehog for Induction of Distinct Ventral Cell Types in CAN Explants," <i>Nature</i> , 375:322-325 (1995).
BF	OHTANI et al., "Differential Effects of ά-, β- and γ-Cyclodextrins on Human Erythrocytes," <i>Eur J Biochem</i> , 186:17-22 (1989).
BG	PATTEN et al., "Opponent Activities of Shh and BMP Signaling During Floor Plate Induction In Vivo," <i>Current Biology</i> , 12:47-52 (2002).
ВН	PATTEN et al., "Opponent Activities of Shh and BMP Signaling During Floor Plate Induction In Vivo," Current Biology, 12:47-52 (2002). S1, Supplemental Data
BI	PORTER et al., "The Product of Hedgehog Autoproteolytic Cleavage Active in Local and Long-Range Signalling," <i>Nature</i> , 374:363-366 (1995).
ВЈ	REYNOLDS et al., "Generation of Neurons and Astrocytes from Isolated Cells of the Adult Mammalian Central Nervous System," <i>Science</i> , 255:1707-1710 (1992).

Examiner	/Daniel Gamett/ (07/24/2000)	Date	
Signature	/Daniel Gamett/ (07/24/2009)	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc. www.FormsWorkflow.com

^{**}CAMINER: Initial ir reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation ir not in conformance and not considered. Include copy of this form with next communication to applicant.

**Applicant's unique citation designation number (optional). **Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Apt of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Complete if Known **Application Number** 10/550,220 Substitute for form 1449/PTO Filing Date October 23, 2006 INFORMATION DISCLOSURE First Named Inventor Beachy and Cooper Art Unit STATEMENT BY APPLICANT 1647 **Examiner Name** Gamett, Daniel C. (Use as many sheets as necessary) Attorney Docket Number JHU1980-1 Sheet

ВК	ROELINK et al., "Floor Plate and Motor Neuron Induction by Different Concentrations of the Amino-Terminal Cleavage Product of Sonic Hedgehog Autoproteolysis," <i>Cell</i> , 81:445-455 (1995).
BL	SHAMBLOTT et al., "Derivation of Pluripotent Stem Cells from Cultured Human Primordial Germ Cells," <i>PNAS</i> , 95:13726-13731 (1998).
ВМ	TABATA et al., "The Drosophila Hedgehog Gene is Expressed Specifically in Posterior Compartment Cells and is a Target of Engrailed Regulation," Genes & Development, 6:2635-2645 (1992).
BN	TANABE et al., "Induction of Motor Neurons by Sonic Hedgehog is Independent of Floor Plate Differentiation," <i>Current Biology</i> , 5(6):651-658 (1995).
ВО	THOMSON et al., "Pluripotent Cell Lines Derived from Common Marmoset (Callithrix Jacchus) Blastocysts," <i>Biology of Reproduction</i> , 55:254-259 (1996).
ВР	THOMSON et al., "Embryonic Stem Cell Lines Derived from Human Blastocysts," Science, 282:1145-1147 (1998).
BQ	THOMSON et al., "Isolation of a Primate Embryonic Stem Cell Line," <i>PNAS</i> , 92:7844-7848 (1995).
BR	WANG et al., "Induction of Dopaminergic Neuron Phenotype in the Midbrain by Sonic Hedgehog Protein," <i>Nature Medicine</i> , 1(11):1184-1188 (1995).
BS	YAMADA et al., "Control of Cell Pattern in the Neural Tube: Motor Neuron Induction by Diffusible Factors from Notochord and Floor Plate," <i>Cell</i> , 73:673-686 (1993).

Examiner	(0.110	Date
Signature	/Daniel Gamett/ (07/24/2009)	Considered

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc. www.FormsWorkflow.com

torm with next communication to applicant.

Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.